Northeastern Research Leadership Development Initiative

Example Framed Challenge Descriptions

**Shared Research Facilities:** With the significant investment in novel research equipment and increased interdisciplinary research Northeastern will develop new shared research facilities. Examples of these facilities include the Massachusetts Green High Performance Computing Center, the Digital Scholarship Commons, the Center for Highrate Nanomanufacturing, and the planned new materials characterization facilities in the new interdisciplinary science and engineering building. What are the best practices for the implementation of shared research facilities and what are the policies and procedures that govern these shared facilities?

**University – Industry Partnerships:** Each year about 10% of Northeastern's research expenditures come from corporate sources. An institutional objective is to diversify funding sources including increasing the funding from industry. The majority of Northeastern's funding is from federal agencies, most notably the National Science Foundation. Barriers to industry supported research include policies around intellectual property, publication practices, and different calendars. What are best practices to strengthen partnerships with industry? What are the attributes of a strong University – Industry partnership?

**Competitive Proposal Teams:** To identify the most competitive proposals, Northeastern implements an internal competition when there is a limitation to the number of proposals that may be submitted to a particular agency or funder. The intent of this process is to identify the team(s) that will submit the most competitive proposal(s) with the goal of improving funding success rate. To what extent is this "limited submission" process effective? Are there other strategies that might result in the most effective "Dream Team" and more competitive proposals?

**Interdisciplinary Doctoral Programs:** Northeastern’s research is at the interface of disciplines to promote new discoveries with the potential of high societal impact. Associated interdisciplinary doctoral education programs will train the next generation of research leaders. Northeastern’s new and emerging interdisciplinary doctoral programs are in the area of Bioengineering, Network Science, and Information Assurance. Additional programs are under development. How can new and distinctive programs be identified and what are the best practices for developing, structuring, and maintaining these programs when participating faculty are from multiple colleges, departments, and disciplines?

**Collaborating in Industry Partnerships:** In the past year research funding from corporate sponsors doubled reflecting about 20% of the research funding received by Northeastern in FY14. An institutional objective is to diversify funding sources including increasing the funding from industry. These funding sources are motivated by industry's need for a competitive advantage, which leads to special considerations around intellectual property, publication practices, milestones, and deliverables. How should faculty approach industry partnerships? What are the attributes of a faculty research program supported heavily by industry projects?

**Climbing the Recognition Ladder:** As the visibility of Northeastern, its research, and doctoral programs increases, the university as a whole will benefit by attracting more highly qualified students, faculty candidates, and research opportunities. Improvements in visibility and recognition are iterative and the benefits increase positively with each cycle. Yet, certain levels of recognition require invitations or previous acknowledgement for consideration. Examples include elite foundations that will "invite" proposals from a list of pre-screened institutions; and the pathway to the pinnacle career recognition such as membership into the National Academies. How does Northeastern or an individual travel the pathway to achieve increased visibility and recognition? What are the barriers and how can these barriers be removed?